

Entomological News

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Pests of Ash (*Fraxinus spp.*) Trees

They are not all emerald

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Recent discoveries of Emerald ash borer in Kansas have PPWC staff answering many questions concerning insect damage to ash trees. This newsletter will address some of the common insects which are commonly seen attacking ash trees.

Lilac-ash borer *Podesia syringae*

The adult lilac-ash borer is a day flying moth, looking very much like a paper wasp. The moths emerge from tunnels in the bark, beginning in March and April, with peak emergence in May and June.

Eggs are laid on the bark or near trunk wounds on the plant. The larvae tunnel into the trunk and feed for a while under the bark. Larvae can be distinguished from other wood boring beetle larvae, by the presence of prolegs on the abdominal segments, each with crochets (an arrangement of hooks). As the larvae

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Emerald Ash Borer

Agrilus plannipennis

The emerald ash borer (EAB) has a one to two year lifecycle. In the spring adults leave the tree through ¼ inch D-shaped exit holes chewed through the bark. Flight time usually begins in May and continues through June.

Females lay eggs on the bark and after several weeks the larvae hatch and bore through the tree bark into to cambium layer. The galleries of EAB larvae are S-shaped and strongly serpentine in appearance. As the larva grows the gallery size increases, mature EAB larvae are 1 to 1 ¼ inches long. The abdominal segments of EAB larvae have a characteristic bell shape.

Feeding by the larvae typically occurs from late July to October. When feeding is completed the larvae create pupation chambers in the outer bark. Actual pupation occurs in the spring, with new adults emerging in May and June.

Currently EAB is only located in Wyandotte and Johnson counties in Kansas. To learn more about the EAB quarantines in these counties visit <http://agriculture.ks.gov/divisions-programs/plant-protect-weed-control/emerald-ash-borer>



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matures it tunnels deeper into the sapwood and spends one year feeding and continuing growth. Frass accumulates around the hole and on the ground as the larvae clean out their tunnels. The fully developed caterpillar chews an exit hole to the outside, before transforming into the pupal state. New moths emerge from the pupal case, leaving the pupal case behind protruding from the trunk and branches. Damage usually occurs low on the host plant from ground level to 3 feet high. Typically ash are attacked when 6 inches or smaller.

Completed galleries are near 3 inches long and 1/4 inch in diameter. Exit holes are round, 1/4 inch often with pupal casing



Lilac-ash borer pupal case protruding from exit hole

Redheaded ash borer

Neoclytus acuminatus

The redheaded ash borer will attack nearly all dead and dying hardwoods, but prefers ash, hickory, oak, persimmon and hackberry. The redheaded ash borer can be problematic in weakened and newly planted trees in nursery stock.

The redheaded ash borer overwinters in the tree, likely in the pupal stage, with adults emerging in early spring. Eggs are laid on the bark, and the larvae feeds beneath the bark, packing the galleries with frass. As the larvae mature they bore into the sapwood of the tree. Galleries are S shaped, but not as tight as those of emerald ash borer. "The larvae of redheaded ash borer and other roundheaded borers are more tightly segmented and round in cross section (resembling the "Michelin" tire guy without arms and legs). In contrast, the larvae of flatheaded borers such as EAB are highly flattened and have a tapeworm-like profile ¹."

Exit holes for redheaded ash borer are oval shaped and 1/4 - 3/8 inch wide.



Carpenter Worm

Prionyshus robiniae

Carpenter worms are large wood boring moths, with female moths having a wingspread of 3 inches. Full grown larvae can be 2-3 inches long. Adult emergence is from May to July. Females lay eggs in bark crevices, near tree wounds or under lichens. The larvae enter the tree through the bark or wound, and seal the tunnel with a silk and wood fiber plug. nitial feeding begins in the inner and outer, but within a moth extends the gallery to the cambium. Within two months the larva is feeding in the sapwood, and in three months the heartwood is reached.

The gallery increases in size as the larva grows and can reach 9 inches long and exceed ½ inches wide. The larva frequently returns to the burrow entrance to expel frass, plugging the entrance with a frass pellet when finished. The larva begins noticeably expelling frass as it begins to feed the second spring. The mature pupa wriggles to the gallery entrance where the adult can easily escape the gallery

The presence of pupal cases in trunk indicates the tree has been infested at least three years.



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Carpenter worm-adult and larva



Like the lilac-ash borer larvae can be distinguished from other wood boring beetle larvae, by the presence of prolegs on the abdominal segments, each with crochets (an arrangement of hooks).



Citation used in Redheaded ash borer:
 1-Ohio State University Emerald Ash Borer Outreach Team,
 Fact Sheet www.ashalert.osu.edu.
 The Ohio State University. College of Food, Agriculture, and
 Environmental Sciences, Section of Communications
 and Technology.

Protecting Your Trees for Borers

1. Water
2. Proper pruning: have a question talk to an arborist.

<http://www.isa-arbor.com/faca/findArborist.aspx>

3. Mulch
4. Fertilize

A well cared for healthy tree is your best defense against insect pests.

